

# THE EAST ASIA-PACIFIC CORAL REEF CONSERVATION INITIATIVE

**NARRATIVE REPORT**  
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# INTRODUCTION



In FY 1999, USAID-EAPEI made a grant to IMA and WRI to implement the Indo-Pacific Destructive Fishing Reform Initiative (DFRI), a comprehensive program to combat the use of cyanide and other destructive practices in the live reef fish trade (LRFT). Details on DFRI implementation of its FY 1999 grant can be found in the progress report submitted to EAPEI in November 1999.

In FY 2000, EAPEI provided an additional grant to the same Initiative, focusing on Indonesia, with small components focused on Vietnam, market monitoring and transformation activities in Hong Kong, and applied research on the potentials of and constraints to aquaculture of reef fish and other reef organisms as a conservation strategy. An Interim Narrative Report was submitted by IMA in March 2001 summarizing the progress of work thus made.

In 2001, USAID-EAPEI provided a new grant to IMA for its East Asia-Pacific Coral Reef Conservation Initiative, supporting continuing DFRI-related activities in Indonesia, Vietnam and Hong Kong, and expanding coral reef conservation initiatives in Kiribati and Vanuatu. Pending release of this grant from USAID-EAPEI, IMA will continued implementation of target activities. This Report covers ongoing and continuing activities in Hong Kong, Indonesia, Vietnam and Pacific Island countries from March 2001 to date.



# HONG KONG AND SOUTHERN CHINA:

## MONITORING AND TRANSFORMING THE LIVE REEF FOOD FISH TRADE MARKET



IMA-Hong Kong (HK) continues to play a very important and ever-increasing role insofar as monitoring trade import and re-exports are concerned, particularly on volumes, species, countries of origin, and retail and wholesale prices. Hong Kong is now no longer only a demand center but is also an important center of transshipment of fish into Southern China. It is estimated that 60% of all fish landed in Hong Kong are re-exported to the mainland.

### MONITORING IMPORTS OF LIVE REEF FOOD FISH

IMA-HK continues to monitor the importation of live reef food fish. It is also collaborating with the HKCSM, AFCD and the Hong Kong University (HKU) to get better data on shipments imported by Hong Kong-registered vessels, to review the process and to discuss the feasibility of expanding the program. Information from shipments is shared with IMA's offices and partners in the Asia-Pacific region so they are able to validate the shipments from their countries of origin.

It has also continued to regularly conduct a survey of the wholesale markets and seafood restaurants in Hong Kong. Wholesale prices from the wholesalers/distributors in five different areas, namely Aberdeen, Kwun Tong, Quarry Bay, Tuen Mun and Wanchai, are updated monthly. Retail prices of 10 common fish species (*Cromileptes altivelis*, *Epinephelus coioides*, *Epinephelus fuscoguttatus*, *Epinephelus lanceolatus*, *Epinephelus polyphekadion*, *Plectropomus areolatus*, *Plectropomus laevis*, *Plectropomus leopardus*, *Cheilinus undulatus* and *Lutjanus argentimaculatus*) are sampled from about 130 randomly selected restaurants around Hong Kong every month.

IMA-HK also continues to work with the HKCSM to move towards greater transparency in the reporting of landings, and the establishment of an industry code of conduct on live reef food fish collection. While admittedly this has been a slow process, IMA-HK, in collaboration with our partner in Australia, is developing a model code of conduct and best practices in the live reef fish trade using the Australian trade





model. We anticipate that the HKCSM will provide inputs into this model, which may thereafter be adopted or modified by other countries in the Asia-Pacific region .

#### MONITORING THE LIVE REEF FOOD FISH MARKET IN THE PEOPLE'S REPUBLIC OF CHINA (PRC)

In response to China's importance in the trade expansion, IMA-HK carried out a preliminary visit from October 19-22, 2001 to Shanghai- the busiest metropolis in the PRC and a city becoming more important in the demand for live reef food fish – to monitor the live reef food fish markets.

The freshwater and marine products wholesale (and retail) market at Tong Chuan Lu (Road) is the biggest market in Shanghai. It is located about 6 km west of Shanghai Train Station. The market sells marine fishes, lobsters, crustaceans and shellfishes, freshwater fish, prawns, Chinese mitten crabs, and dried marine products like shark fins. There are

about 400 shops selling freshwater and marine products, with about 20 shops selling live reef food fish and lobsters solely. Compared to the market at Huang Sha, Guangzhou, the shops are scattered along both sides of a section of about 400 meters of Tong Chuan Lu.

In terms of species composition, lobsters (especially Australian rock lobsters) were in abundance. Wild-caught fishes (reef food fish) were relatively few and only about 8 shops had fishes in their tanks. In terms of number, the red coral trout (*Plectropomus leopardus*) was the majority (about 75%), followed by the humphead wrasse (*Cheilinus undulatus*) (15%), and the highfinned grouper (*Cromileptes altivelis*) (10%). Only one individual of the flowery grouper (*Epinephelus polyphekadion*) was observed.

The table below shows the comparative wholesale prices (HK\$ per kilo) in Tong Chuan Market (October 2001), Guangzhou (July 2001) and Hong Kong (September 2001).



Table 1 Hong Kong and Southern China Wholesale Prices (HK\$)

Species	Tong Chuan (Oct 2001)	Huang Sha (July 2001)	Hong Kong (Sept 2001) – Wholesale	Hong Kong (Sept 2001) -Retail
<i>C. altivelis</i>	685.7	611.1	537.5	687
<i>E. polyphekadion</i>	276.2	222.2	143.2	331.1
<i>P. leopardus</i>	314.3	370.4	261.1	434
<i>C. undulatus</i>	510.5	703.7	409.5	774.2
Australian rock lobster	219			242.6





Apart from Tong Chuan Market, there are other markets, namely Wing Hong Market, Jiang Pu Market, Fang Bang Market, but none of them have live reef food fish or lobsters being sold.

HK hopes to expand its monitoring work in the PRC to include systematic and comprehensive surveys of live reef food fish prices, species and volumes in other wholesale markets and retail outlets in the other cities of the PRC.

#### RESPONDING TO ISSUES CONCERNING THE LIVE REEF FISH TRADE

In late June 2001, IMA-HK participated in the 2nd SPC Heads of Fisheries Meeting in Noumea, New Caledonia. A presentation was made to the delegates on the current status of the live reef food fish trade in Hong Kong, a topic that was met with much interest by all participants. This resulted to the continued support of the Heads of Fisheries for the work of IMA and its partner organizations on this issue.



In August 2001, IMA-HK visited the Great Barrier Reef in Australia to look into its live reef food fishery. The visit was made in collaboration with Geoffrey Muldoon of the Coral Reef Research Center (CRC) at the James Cook University in Townsville. A case study, with implications for development of a voluntary code of conduct or best practices for the live reef food fish trade in the Asia-Pacific region, is being jointly prepared by IMA and CRC. Australia is thought to be the only known place carrying out the capture and export of live fish in a sustainable manner and the Australian model could be adaptable to some areas of the Pacific looking to develop their reef fisheries.

In September 2001, IMA-HK coordinated the International Coastal Cleanup for the 4th year in succession. In 2001, over 2,300 people took part in the world's largest coastal cleanup. This was a record for cleanup participation in Hong Kong, and expanded IMA's work on marine conservation education.





# INDONESIA:

## REFORMING THE LIVE REEF FISH TRADE



Indonesia contains the great majority of Southeast Asia's coral reefs, and is the center of global marine biodiversity. It is also the largest single source for live reef fish in international trade, including both aquarium and live reef food fish species. Cyanide fishing is ubiquitous in many key reef areas of the country, as is the destructive targeting of grouper spawning aggregations for the live reef food fish trade. The Indonesian LRFT typically targets pristine and isolated reef complexes far from other reef stressors such as siltation, coral mining, and land-based pollution, and may be the major threat to these last, best reef areas. To be able to continue addressing this threat and finding solutions to it, IMA-Indonesia has embarked on the following:

### 2001 COUNTRY STATUS OVERVIEW (CSO) OF LIVE REEF FISH AND CORAL EXPLOITATION AND TRADE IN INDONESIA

In October 2000, IMA-Indonesia entered into a Memorandum of Understanding (MOU) with the MMAF and Telapak Indonesia for a collaborative study to prepare and publish a Country Status

Report on Live Reef Fish and Corals Exploitation and Trade in Indonesia. In March 2001, MMAF sponsored a series of consultative meetings with a wide variety of stakeholders related to the live reef fish trade. The meetings were aimed at verifying data jointly collected by IMA-Indonesia, Telapak and ProMOLA, and soliciting ideas prior to developing a national management strategy on the live reef fish trade. The Indonesia Maritime Council or *Dewan Maritim Indonesia* (DMI) spearheaded the development of the national management strategy, with assistance from IMA-Indonesia. A commitment was also obtained from the Indonesia Ministry of State for Environment (MSE), particularly the Environmental Impact Management Agency (*Bapedal*), for the development of said strategy.

Also in March 2001, the Bahasa Indonesia version of the 2001 CSO was posted in the IMA-Indonesia website ([www.ima-indo.org](http://www.ima-indo.org)). IMA-Indonesia received many feedbacks, responses, and inquiries, including an offer for a joint research on the live reef food fish exploitation



and trade in Sulawesi from a website visitor who is PhD candidate from University of California- Berkeley. Further talks have been held, and the joint research is to commence by March 2002. The English version of the 2001 CSO has likewise been posted in the same website.



#### 2002 COUNTRY STATUS OVERVIEW (CSO) OF LIVE REEF FISH AND CORAL EXPLOITATION AND TRADE IN INDONESIA

In April 2001, IMA- Indonesia organized a multi-stakeholder meeting to evaluate the processes and results of the 2001 CSO. Based on the evaluation, IMA-Indonesia then presented the objectives and directions for the 2002 CSO. In mid-April 2001, IMA- Indonesia put together the Terms of Reference (TOR) for the 2002 CSO for inputs and feedback by IMA's strategic partners.

From July to August 2001, IMA-Indonesia involved several stakeholders to improve the data gathering protocols for the 2002 CSO. The objective of this activity is to allow greater participation of fishers, collectors, and exporters in collecting data by using simple but effective methods. The involvement of the *Nusantara* Indigenous People Alliance (*Aliansi Masyarakat Adat Nusantara*, AMAN) is significant. Intensive discussions have also been held with live food fish exporters in Makassar, South Sulawesi, who provided important feedback on the lack of enforcement by government officials in taking records of exports of marine commodities. IMA-Indonesia will include this feedback into its

recommendations to the MMAF on how to improve the monitoring system at the local level.

A joint workshop was also held on October 12, 2001 in Bogor, involving many NGOs, focusing on issues concerning natural resources, economic development, regional autonomy, gender and human rights. There are many NGOs and NGO networks that collect a wide variety of data related to natural resources management. These data are usually fragmented, disintegrated and sector-biased, e.g. forestry, agriculture, marine legal aids, indigenous people, etc. The objective of the workshop was to discuss the integration of sectoral information as a means to reform the economic policy related to natural resources management.

#### ACTION PLAN FOR POLICY REFORM AND INSTITUTIONAL STRENGTHENING TO MANAGE LIVE REEF FISH AND CORAL EXPLOITATION AND TRADE

Based on the CSO 2001 and the process of dialogue with relevant stakeholders, a practical and widely-supported Action Plan is expected to be developed and endorsed by the highest levels of government, to guide the monitoring and management of the harvest and trade in live reef fish and corals throughout the country.

IMA-Indonesia maintains ongoing dialogue with two mariculture business groups with regard to the possibility of having a joint species-oriented protected site management in Kepulauan Seribu, North of Jakarta, and in Lampung, Southern Sumatra. The groups are willing to work in collaboration with the local communities. IMA-Indonesia facilitates the involvement of local NGOs in assisting the local communities. Results of this effort will serve as important inputs for the forthcoming strategy on live reef fish and coral exploitation and trade, particularly in terms of the economic and technical interventions.



Since May 2001, IMA-Indonesia has also been involved in the policy reform of Indonesia's Fisheries Law through its membership in the Technical Committee for the Reform of Indonesia Fisheries Law. While MMAF is adopting some recommendations proposed in the 2001 CSO, more fieldwork by IMA-Indonesia and its strategic partners are necessary to support the policy level work.

IMA-Indonesia has also been involved in linking markets of cyanide-free live food fish. Local fishers from the island of Kei Kecil in Southeast Mollucas requested IMA-Indonesia's assistance in late May 2001 in marketing cyanide-free live reef food fish, through the Nen-Masil Foundation, a local NGO that has long been assisting coastal communities in the island. IMA-Indonesia facilitated this need by linking the Director of the Nen-Masil Foundation with the Chief Executive Officer of the Resource and Energy Development (RED), whose business includes live fish export. RED also has a program on combating cyanide fishing in West Lombok and Eastern Bali. IMA-Indonesia is documenting the negotiation processes between the Nen-Masil Foundation and RED as part of the important inputs to the forthcoming strategy and action plan.

#### SURVEYS ON FIELD COLLECTION METHODS AND TRADE PRACTICES IN THE LIVE REEF FISH AND CORAL TRADE

Surveys were conducted in the following sites in collaboration with Telapak Indonesia and other local NGO partners:

*Bali and Lombok.* IMA- Indonesia and Telapak



Indonesia assisted Bahtera Nusantara, a local NGO in Bali, in documenting degraded habitats and destructive fishing practices. A video documentation is now being edited following intensive discussions among IMA-Indonesia, Telapak, and Bahtera Nusantara. Intensive discussions with the Bali-based ornamental fish exporters have also provided the team with insights on ways to adopt the Philippine experience on alternative fishing practices and micro-enterprise development. These will be built into IMA's work in Bali, where trust-building and communications with the Bali Provincial Office and the Buleleng District Office of Marine Affairs and Fisheries concerning assessments for establishing a cyanide detection test (CDT) facility are ongoing.

*Southeast Sulawesi.* Intensive communications with local NGOs (Yascita, Suluh, and Swami) in Southeast Sulawesi are ongoing. The local NGOs have discussed intensively the trial investigation toolkit for live reef fish and coral exploitation and trade. However, IMA-Indonesia has yet to access funds to assist local NGOs to work more intensively in the field.

*Southern Sulawesi.* Preparation for fieldwork in Spermonde archipelago started in late-March 2001. LEMSA, a local NGO working with fishing communities in the archipelago, has shown its strong commitment to cooperate with IMA- Indonesia in field studies. The investigation toolkit has also been intensively discussed by IMA-Indonesia with LEMSA.

*Northern Sulawesi and Gorontalo.* IMA-Indonesia facilitated the Sulawesi Fisherfolks Congress held in Manado in late-May 2001. The Congress provided IMA-Indonesia with opportunities to probe strategic issues related to the live reef fish and coral exploitation and trade. Non-session discussions were held to introduce the investigation toolkit. The support of Yayasan Kelola Manado enabled IMA-Indonesia to access some strategic hubs in Sulawesi.





The Yayasan Kelola (Gorontalo branch) also provided valuable insights and data regarding exploitation and trade of live reef fish in Tomini Bay and adjacent waters, as well as feedback on how to further improve the trial investigation toolkit.

#### INTEGRATED AND COMPUTERIZED DATABASE ON LIVE REEF FISH AND CORAL TRADE

IMA-Indonesia is currently in the process of developing its integrated and computerized database. All existing data, either from investigations carried out directly by IMA-Indonesia or by partners, are stored into an old system previously used for the 2001 CSO. Once the system is in place, data on the reef species trade resulting from the work of IMA and its partners will be made available electronically (i.e. via internet and CD-Rom).

#### INTEGRATED COMMUNITY TRAINING AND AWARENESS PROGRAMS (INCLUDING SUSTAINABLE HARVEST METHODS, POST-HARVEST CARE, SAFE DIVING, MARKETING, AND LIVELIHOOD ENHANCEMENT) AT SELECTED SITES WHERE CYANIDE AND/OR OTHER DESTRUCTIVE METHODS ARE PREVALENT

IMA-Indonesia maintains intensive communication with some business groups that are already aware of the importance of a healthy marine environment to sustain their businesses. It also takes advantage of other venues or uses the NGO networks in disseminating information. IMA-Indonesia has also linked with Bahtera Nusantara in Bali to train one of its staff on environment-friendly fishing techniques, other alternative non-destructive fishing methods, and marketing strategy.

Integrated community trainings are yet to be conducted in collaboration with other NGOs.

#### PILOT CYANIDE DETECTION TEST (CDT) LABORATORY IN BALI



IMA-Indonesia is working to assist the local office of the Marine Affairs and Fisheries in both Bali Province and Buleleng District levels in the design and development of a pilot CDT laboratory, and train fisheries officers in related monitoring, inspection and sampling methods and procedures, in response to specific request from the MMAF. This will build the capacity of Indonesia to systematically sample live reef fish shipments and test the tissues of the sample fish collected for the presence of cyanide (a strong indicator that the poison was used to capture the fish).

Before this comes to fruition, however, there is a need to conduct consultations with the community and business sectors, a process which will be done jointly by Telapak, Bahtera Nusantara, and IMA-Indonesia.

The recent political changes in Indonesia, however, has made it necessary to get anew the support from the Ministry of Marine Affairs and Fisheries. There is currently a strong pressure coming from the Parliament to the line sectoral Ministries, to boost up the foreign exchange and state revenues. The tendency of MMAF, therefore, is to generate funds from existing licensing schemes, such as licensing of foreign flag fishing vessels. Conservation issues have been relegated to the background and are considered less important. IMA-Indonesia, however, maintains communication with the Ministry and has also approached the Ministry of Environment to officially support this plan.



# VIETNAM:

## REFORMING THE LRFT AND PROMOTING MARINE CONSERVATION



The live reef fish trade (LRFT) is a relatively new issue in Vietnam. It has a potential to cause negative impacts on fisheries resources and the marine environment as a whole, if not appropriately managed. Vietnam does not have a sound basic policy framework for the management of its marine resources, let alone sustainable management of its live reef fish resources. This has been mainly due to the lack of understanding of the trade, both at the decision-making level and the grassroots level, and the lack of technical expertise and support to deal with it.

In late-1998, the Vietnamese Government requested the assistance of IMA in assessing the country's live reef fishery with the aim of developing appropriate policy and management responses. As a result, a team of experts from IMA carried out initial field assessments during mid-1999 at Ha Long Bay, an important coral reef area (and World Heritage site). Even this preliminary assessment confirmed that a large proportion of the fishermen engaged in the live reef fish trade were using cyanide. The

team also noted that the policy and enforcement framework for reef resource management was quite weak. Also during 1999, a number of IMA information, marine environmental education, and communication materials were translated into Vietnamese at the request of Vietnamese officials.

Building on these preliminary activities, IMA and the Institute of Fisheries Planning and Economics (IFEP)—a part of the Ministry of Fisheries (MOF)—entered into a Memorandum of Understanding (MOU) for collaborative efforts to implement programs combating destructive fishing in Vietnam and to strengthen the capacity of the Ministry of Fisheries in monitoring the live reef fish trade. IMA-Vietnam also works closely with the Department of Fisheries Protection and the Information Department of the MOF, the National Environmental Agency (NEA), the Fisheries Export Association and other international and local NGOs. At the local level, IMA-Vietnam is working with provincial Fisheries Departments, the Fisheries



Extension Center, and the Fisheries Resources Protection Sub-departments. Research activities are carried out in collaboration with the Institute of Oceanography and the Fisheries Research Centers. Project activities in the field have received strong administrative support from the local people's committees, including the People's Aid Coordinating Committee (PACCOM).

#### COMMUNITY-BASED FISHERIES RESOURCES MANAGEMENT IN KHANH HOA PROVINCE

This is a pilot project being implemented in Van Ninh district, Khanh Hoa province (located in Van Phong bay). With an approach centralized on the local people, the project has been strongly supported by local authorities at all levels. IMA-Vietnam has launched activities raising awareness of the local people on issues concerning the marine environment and resources. These include the organization of international coastal clean-up, study tours for primary pupils, socio-economic assessments, participatory underwater surveys, dissemination of survey results to the community, community group discussions to get consensus on solutions, and helping the locality develop proper strategies for coastal resources management.

Currently, IMA is assisting the community in establishing and managing a small-scale marine reserve- Reef Trao- to be co-managed

by the local people and government. Since the "open access" to resources has led to the depletion of resources, the community-based model of coastal resource management will provide a good example for other coastal areas to follow.



The idea of establishing a marine reserve in the area is particularly relevant as it comes at a time when Van Phong Bay has been identified by the General Department of Tourism as one of the four national coastal tourist areas to be developed. IMA-Vietnam is actively contributing its experience and efforts to establishing and soon putting this protected area into effective operation.

#### COMMUNITY-BASED FISHERIES RESOURCES MANAGEMENT IN PHU YEN PROVINCE

IMA's activities in Phu Yen province were launched in February 2001. Phu Yen is situated in South Central Vietnam with a coastline of more than 180 km and 37 fishing villages. IMA-Vietnam met with representatives from both Phu Yen People's Aid Coordinating Committee (PACCOM) and Phu Yen Fisheries Department resulting to a signing of a Memorandum of Understanding by IMA and Phu Yen Department of Fisheries. Under this memorandum, IMA's main working partner is the Phu Yen Department of Fisheries. The project site was identified as Quang My village, An Chan commune, Tuy An district, a village



situated in an area of sandy beach, several kilometers long. Rocky reef covers a large proportion of the project area. The bay here suffers much wave action making cage aquaculture impractical but much direct fishing/diving also takes place. Several large islands are visible from the shore and these are reported to be used by turtles as a suitable site for them to lay their eggs.

The work in Phu Yen will focus on protecting coral reef biodiversity, promoting marine environmental awareness, and striving to prevent overfishing of rare and high value species in the project area and the use of destructive fishing practices.

In particular, a Participatory Rural Appraisal (PRA) will be conducted to gather socio-economic data on selected households and communities, in collaboration with local district and commune officials. An underwater biological survey in selected communities will also be conducted to assess resources. Based on these activities, a coastal resources co-management project in Phu Yen will be implemented, to include a number of environmental awareness activities.



#### DEVELOPING AND PROMOTING MARINE CONSERVATION AWARENESS

IMA-Vietnam has launched a long-term community education and environmental awareness campaign directly targeting village-level community while also maintaining a

national focus. The campaign addresses general coastal environmental conservation, human impacts, biodiversity, and resource sustainability, in addition to facilitating community awareness of the work being conducted in the other components of the IMA-Vietnam program. Work is conducted directly at the grassroots, educating target groups, conducting coastal clean up events, and working with local schools to develop conservation enhanced school curricula and launching competitions. IMA also utilizes various forms of media to allow the work to reach a larger audience and have a wider impact. Radio, television and the press are used to their full potential to broadcast events of interest, or advocate project work, to a district, provincial or even national level audience.

In particular, IMA-Vietnam continues to develop and promote its environmental awareness strategy using formal and non-formal means. Aside from the use of the Vietnamese-translated Coral Reef Education for Students and teachers (CREST), IMA-Vietnam has also undertaken informal means of raising marine environmental awareness.

For the year 2001, IMA-Vietnam conducted several coastal cleanups in such places as the Tuy Hoa Beach in Phu Yen Province on April 1, 2001 in cooperation with the Phu Yen Women Union. On the occasion of Biodiversity Day (22 May 2001) and World Environmental Day (5 June 2001), IMA-Vietnam, in cooperation with the Department of Fisheries Resources Protection-MOF and NEA-Ministry of Environment, Science and Technology, conducted an awareness program in four coastal provinces: Khanh Hoa, Phu Yen, Quang Ninh and Hai Phong. More than 2000 participants took part in the coastal cleanup, workshops, and planting of mangrove species. While IMA-Vietnam is not participating in the annual observance of the International Coastal Cleanup held every 3<sup>rd</sup> Saturday of September,





it has collected all available information for the production of a 15-minute film for national TV and radio broadcast. This will not only emphasize the importance of the activity but will also target a larger audience and make a broader and bigger impact as well.

IMA-Vietnam has also developed its information system, including its website and database containing both general and field-related sites (see [www.ima-vietnam.b2vn.com](http://www.ima-vietnam.b2vn.com)).

It has also commenced a program raising awareness on marine resources protection in Vietnamese youth - particularly the Primary School I in Van Hung Commune, Van Ninh District, Khanh Hoa- using an in-school competition called “kinh van hoa”. In May 2001, a study tour to the Oceanography Museum was organized for 40 school pupils and 8 teachers of the Van Hung I primary school to raise awareness about marine life and the need to protect marine resources.

#### MONITORING THE TRADE IN LIVE REEF FISH AND OTHER REEF SPECIES

Vietnam's proximity to China, the ultimate market for the live reef fish trade, has somehow stimulated the exploitation activities for live reef fish in Vietnam. The economic value of live reef fish such as groupers and snappers is up to a dozen times higher than other common fish. Billions of dollars have been collected annually from the trade with at least 150 thousand tons of live reef fish imported annually to countries like Hong Kong and Southern China. The consequences of wars, economic blockade together with the open access policy in fisheries resources, lack of knowledge, and many destructive fishing methods such as explosives, by-catch fishing and cyanide fishing for live reef fish have all taken their toll. They have not only led to depletion in fisheries resources but also destroyed coral reefs, the habitat of many

species including target species, and the loss of biodiversity and productivity of coastal and island water zone.

IMA-Vietnam will, in tandem with its partners- especially the Ministry of Fisheries- strengthen the government capacity in monitoring and regulating the live reef fish trade and develop a national strategy aimed at combating destructive fishing methods, contributing to the sustainable management of coastal resources. To achieve this objective, IMA-Vietnam is extending its activities to other marine areas- the waters of Hai Phong and Quang Ninh in the Northern Vietnam and Phu Yen province in South Central Vietnam- where biodiversity remains high and the trade has been identified as particularly rampant.

The investigation on the trade in live reef fish and other reef species on selected areas of Hai Phong and Quang Ninh Provinces will involve investigating and documenting the market chain (species, operators, capture methods, prices, middlemen, export system, destination, etc.) from the reefs in the key collection areas to the ultimate markets in Hong Kong and Southern China.

#### BUILDING GOVERNMENT CAPACITY FOR LIVE REEF FISH TRADE (LRFT) MONITORING AND ENFORCEMENT

In March and April 2001, a number of field visits were made to Khanh Hoa, Phu Yen, Quang Ninh and Hai Phong Provinces to collect information





about the LRFT. The survey was conducted together with staff from the Department of Fisheries Resources Protection and the Center for Fisheries Information-MOF. To begin to tackle the problems associated with the LRFT, IMA-Vietnam and the Institute of Fisheries Planning and Economics, Ministry of Fisheries Vietnam, held a workshop of collaborating agencies and organizations on 23 April 2001 at the Nikko Hotel in Hanoi, Vietnam (copy of LRFT Proceedings attached).



Participants included representatives from local government and international organizations, scientists, bilateral funding agencies, traders (both state and private), and media. The purpose of this workshop was to commence effective collaboration among relevant agencies, organizations and the private sector through exchange of information and knowledge. It also resulted to a collaborative strategy to identify the key threats and issues associated with the trade, prioritize conservation actions, and determine the respective roles of organizations in undertaking these actions in Vietnam.

IMA-Vietnam will implement a capacity-building program on coastal co-management for local officers and the community. It will also carry out a pilot cyanide fishing reform training program in Khanh Hoa province for cyanide fishers and local officials, and utilize the pilot program as a model for replication in other

areas of the country, particularly Ha Long Bay. It will also train local officials on methods for monitoring and managing the LRFT. A skills training program on non-destructive reef fishing methods, post-harvest care, dive safety, with complementary training on the identification of alternative livelihood opportunities will also be prepared.

At the national level, IMA-Vietnam will also conduct a survey and analysis of national and local laws, regulations and management and enforcement activities related to coastal resources management with special focus on LRFT. It will implement a national communication strategy on marine environment awareness and education and assist the Ministry of Fisheries to develop and implement a national policy on monitoring and managing the trade in reef species, including a national program to combat destructive fishing as part of sustainable co-management of coastal resources.

Internal staff training has also been emphasized for IMA-Vietnam staff to enable them to cope with the developing trends and in order for them to transfer these skills to their partners. These trainings include: gender and development; project management; leadership and management in environmental administration provided by the Institute of Management Training (MOSTE) and the German Development Agency (DSE); and, management of consultants.



# PACIFIC ISLANDS:

BUILDING CAPACITY FOR LOCAL MANAGEMENT OF CORAL REEFS AND REDUCING THE IMPACTS OF  
DESTRUCTIVE FISHERIES AND OVERFISHING



In line with IMA's strategic planning, during 2001 the Pacific Program has expanded its destructive fishing improvement activities, first started in 1999-2000 under the EAPEI-supported Indo-Pacific Destructive Fishing Reform Initiative (DFRI), into a broader based Coral Reef Initiative (CRCI). IMA's strategically developed Pacific Program, a portion of which is funded by EAPEI-2001, focuses on the conservation and sustainable use of coral reef ecosystems, specifically working through local stakeholders to target threats concerned with habitat destruction, overfishing and destructive fishing.

## ESTABLISHING PARTNERSHIPS FOR FISHERIES MANAGEMENT AND AWARENESS

Table one (see page 20) summarizes the full range of IMA's Pacific Program activities, many of which are being put forward for 2002 EAPEI funding for those countries that are eligible. This Pacific regional initiative was developed through needs assessments carried out during 2000 and updated in 2001, which demonstrated that major threats to the Pacific Islands'

coral reef ecosystems can be addressed by building local capacity in two main areas, namely: 1) government, community and private sector capacity to manage fisheries and reduce their destructive impacts and tendencies that result in overfishing, and 2) raising awareness about coral reef ecosystems through integrated learning programs which include MPAs, customary knowledge, information centers, school curriculum, audio-visual and written information.

As the program table shows, these two capacity building streams are common throughout the Pacific Islands, and have enabled the tightly funded and carefully focused IMA program to work with a wide range of local partners to efficiently replicate successful interventions across the Pacific. As this new program has unfolded, we have found a tremendous cooperative spirit from stakeholders and new staff throughout the region, resulting in a growing number of partnerships now providing leadership on marine conservation in a majority of



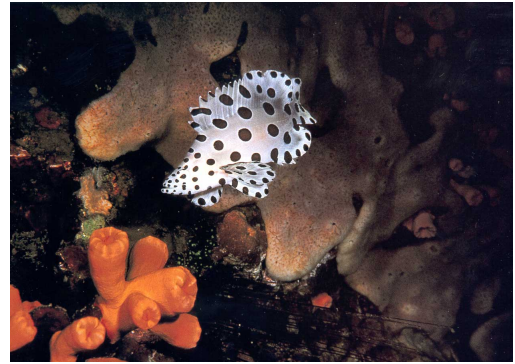
BUILDING CAPACITY FOR FISHERIES MANAGEMENT IN VANUATU  
AND KIRIBATI

During 2001, the EAPEI grant to IMA has provided support for the fisheries program development in Vanuatu and Kiribati (at Christmas Island). Here, in line with the EAPEI project objectives, IMA, government, community and private sector partners have started to combat destructive fishing, reduce overharvesting of live reef fish and other products, re-orient export market chains towards sustainability, and consolidate improvements through participatory management plans and policy development.

MARICULTURE DEMONSTRATED AS A PRACTICAL INCENTIVE FOR  
MARINE CONSERVATION

In Vanuatu, through a joint Fisheries Division and IMA initiative, endangered giant clams (*Tridacna crocea*) are no longer harvested from the wild for export under the aquarium trade. Instead, government has established quotas for the more common species that will be phased altogether as an incentive for collectors and communities to begin culturing these valuable clams using known technologies.

Mollusc culturing and harvesting has been used successfully in Vanuatu as an incentive for community-based establishment of marine protected areas, strengthening traditional use of tabus, where reefs are “blocked” by the chiefs for three years, seeded with cultured trochus by Fisheries, and then re-opened for a short harvesting period once the trochus have grown to legal size. Vanuatu’s 100-year old trochus industry (which manufactures and exports valuable buttons) has been sustained using this approach, also increasing reef biodiversity through MPA establishment based on strengthening customary management and tenure. Once clam culturing starts up on a larger scale, the same model will be used providing important coral reef ecosystem and sustainable livelihood benefits. Unfortunately, however, donors



have been slow to support the clam culturing initiative.

BUILDING LOCAL CORAL REEF ASSESSMENT CAPACITY

Collectors in Vanuatu also export live aquarium fish, some cultured corals, and live rock. Management planning is therefore underway with Fisheries and the Environment Unit to ensure these collection activities and trades are practiced sustainably and bringing maximum benefit to the local communities involved. By leveraging ADB (Asian Development Bank) funding under a partnership with the SPC (Secretariat of the Pacific Community), IMA Vanuatu was able to respond this August to local requests by bringing in scientists through IMA’s Integrative Biological Research Program to help Fisheries Division undertake assessments of aquarium fish stocks in harvesting areas around Efate – the main island. The underwater assessments were conducted as capacity building activities, with scientists diving alongside local fisheries officers and the Vanuatu Fisheries Director himself!

The assessment report is still being prepared, however, aquarium fish stocks and targeted reefs in over 20 locations were found to be in good condition providing considerable optimism that the management plan being developed will, with regulatory capacity building, ensure sustainability and continued use of non-destructive practices. Vanuatu Fisheries continues to provide strong leadership in these matters, with periodic back-up from IMA, and has asked IMA to help develop guidelines for coral



culture, live-rock harvest, and in turn to support the development of an Inshore Fishery Management plan for the whole country.

#### STRENGTHENING CUSTOMARY MARINE TENURE

One of IMA's strengths, which has become invaluable in supporting inshore fisheries management planning in this very traditional Melanesia country, is having a coordinator who spent the last five years recording customary marine tenure (CMT) practices through the Vanuatu Cultural Centre. Acceptance by the national council of chiefs is therefore enabling IMA to promote conservation-based solutions to coral reef issues through a sustainable and locally acceptable CMT framework.



#### REGIONAL SUPPORT FOR CUSTOMARY MANAGEMENT

Such an opportunity and the benefits derived have wider regional significance, whereby CMT interventions, strategies, lessons and informational materials developed in Vanuatu by IMA can be quickly replicated in neighboring countries through the IMA regional partnership network. This is helping to provide support where fundamental customary approaches have either been eroded (e.g. in Fiji) or the conflict between custom and introduced styles of fisheries management (e.g. in PNG and Solomons) is preventing CMT from being expressed and implemented to its full effect. CMT is fundamental in giving communities a strong sense of ownership and responsibility over coastal resources. IMA-Vanuatu is therefore working closely with IMA-Fiji to be able to trans-

fer CMT information during the coming year so that it can be used to strengthen CMT in Fiji where the Native Land and Fisheries Commission is busy decentralizing Crown ownership of coastal resources to over 400 'traditional' community units. Unfortunately, however, there is limited knowledge in Fijian communities about how to implement responsible fisheries management (for example in establishing practical MPAs or *tabus* to help solve overfishing), so IMA's partnership initiative comes at a critically important time for Fiji. Support for this important and exciting program element is being requested as a component of EAPEI funding to IMA in 2002. Similar transfer of information is being planned with IMA-PNG and partners in Solomon Islands.

#### LIVE REEF FOOD FISH CHALLENGES

One of the more destructive fisheries being promoted across the Pacific is the Live Reef Food Fish Trade operated predominantly by Chinese and Hong Kong businessmen who pay attractive prices to Pacific Island fishermen and coerce governments into allowing them to fish long-lived slow growing species of reef fish. These fish get shipped live by the 15 tonne-load to Hong Kong and China to satisfy the banquet and restaurant trade.

Sadly, though, this has become a destructive fishery since in all countries where live fishing is started, the grouper, Napoleon wrasse and coral trout populations are quickly overfished, unable to sustain unregulated commercial fishing pressure. Spawning aggregations are also targeted, quickly ripping out the breeding stock, and with mortality rates



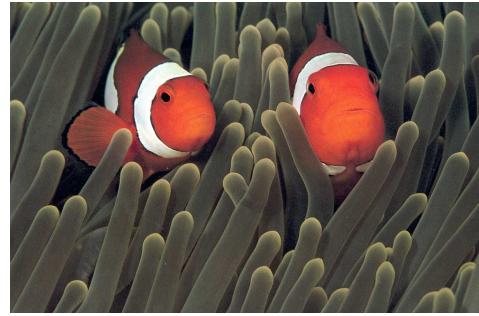


as high as 70% (due to poor practice and improper handling of caged fish awaiting shipment) there is added pressure to overfish in supplying the 15 tonne quotas necessary to make a shipment cost-effective.

As summarized below, IMA, with very limited funding, has been attempting to deal with this growing trade and the fishery trials initiated by private sector companies with government and community partners in PNG, Solomons, Marshalls, Kiribati, Vanuatu, Fiji and Tonga. Only in Australia, where the fishery is heavily regulated through minimum size limits exceeding 38cm, stock assessments, predominant targeting Leopard Coral Trout (*Plectropomus leopardus*) and unequivocal use of airfreight – which keeps exports down to 300 kg lots – has the fishery shown some ‘continuity’ of harvesting over the years.

It has still to be demonstrated a ‘sustainable’ fishery in Australia, and, in the Pacific Islands, without effective stock assessment, appropriate regulations, regulatory capacity being built, and an unfeasible shift to airfreight, it is clear that where adopted the LRFFT will quickly become a destructive fishery. Currently, it may bring short term benefits but effectively wipes out the large species of reef fish, eradicating subsistence fishing opportunities and irreversibly upsetting the complex ecology of globally significant reef ecosystems.

It is not surprising, therefore, that IMA’s Pacific Program is strongly motivated to encourage Pacific Island governments to consider the ramifications of initiating LRFFT trials and of raising expectations. IMA’s underfunded regional advisory program, though, is challenged by a lack of complete information about the fish, fishing impacts, and effective management regulations, as well as misguided perceptions that this fishery can benefit Pacific Island people (or the few self-serving businessmen who can get in quick to reap the short term profits).



To help alleviate the lack of information on management and regulation, IMA recently initiated a study of the Australian LRFFT fishery looking for useful information to apply in Vanuatu (as well as PNG, Solomons, Marshalls and Fiji where trials and commercial fishing have been initiated). The preliminary results from Australia, however, are showing that the management factors that underpin the Australian fishery are unlikely to be achieved in the short term within the Pacific Islands, at a pace fast enough to be able to keep up with the expanding trade. Effective regulatory capacity takes time and resources to build, all species of reef fish are targeted, there are no minimum size limits in use, awareness about releasing undersized fish or non-target species has yet to be achieved, stock assessment studies and monitoring programs are virtually non-existent, and freight space on planes is already severely limited.

IMA is therefore striving to help governments and communities build capacity and adopt effective guidelines in those countries that insist on pursuing the trade. The opportunity, though, still exists for Pacific Island countries to realize the importance of maintaining viable populations of grouper, Napoleon wrasse and coral trout, and to say “no” to the trade. EAPEI’s assistance in developing the evidence to support this continues to be of fundamental and growing importance to the Pacific.





In conjunction with the ADB funds and SPC, IMA also worked with Vanuatu Fisheries to complete an assessment of grouper, Napoleon Wrasse and coral cod in Vanuatu during August's underwater surveys of Efate. Preliminary reports show that population densities of these fish were low and insufficient to support the trial fishery underway which has been using traps to catch the fish. Vanuatu Fisheries reacted quickly following the survey and put the Efate trial on hold pending completion of the survey report. However, given that the Fisheries Department's mission is to develop sustainable fisheries in response to investment proposals, the survey must also be extended to a number of the other islands in the Vanuatu chain, before a decision can be made nationally about this destructive fishery. EAPEI's continued support to IMA in Vanuatu will ensure that the government can achieve such an outcome.

In the other Pacific Island countries where IMA is providing a similar level of input to the government managers and decision makers, it is interesting to note that PNG has also halted trials and is considering whether or not to reimpose a moratorium; Fiji is still continuing trials, with at least three LRFFT companies getting established; Kiribati has a trial fishery running in Abaiang, currently on hold; both the Solomons and Marshalls Islands are allowing virtually unregulated exploitation, with IMA trying to harness the funding to get people who can help re-orient government on this fishery; there is no information available on the status in FSM; and in Tonga, an IMA/SPC assessment will take place in December 2001, in response to the government's request for assistance.

The IMA-HK program continues to be an invaluable source of information for IMA's Pacific Island partners in their effort to quantify and "size-up" this trade. IMA-HK is also spearheading a new IMA initiative to develop a code-of-

conduct providing best-practice guidance in those countries that do proceed with the fishery.

#### AQUARIUM TRADE MANAGEMENT SUPPORT IN CHRISTMAS ISLAND, KIRIBATI

The market for the LRFFT is in Hong Kong, and although Chinese boats are turning up to fish places as far out in the Pacific as Tonga, they have yet to make it to Christmas Island. Christmas Island is located in the Line Islands, 1000 miles south of Hawaii on the equator, in the Republic of Kiribati – some 35 coral atolls with a total land area of about 300 square miles, occupying 2.5 million square miles of ocean in the Central Pacific. Christmas is the largest atoll, being very isolated, arid, with a population of 4-5000 subsisting on reef and oceanic fisheries, fishing-tourisms, and exports that include copra, seaweed and aquarium fish, the latter being flown out weekly to Hawaii.

Given the proximity of Christmas Island to IMA's Hawaii office, the importance of its aquarium fishery in the Pacific (dominating the world supply of Flame Angelfish, for example), and the limited local management capacity available, IMA has assigned a high priority to working with local partners on Christmas Island.

Under the partnership with SPC, in July 2001, IMA completed an underwater assessment of aquarium fish on Christmas Island working with Fisheries Division, the Petfish Association (9 local companies), and a new multi-stakeholder committee known as the Christmas Island Conservation Resources Committee towards developing a management plan for the fishery.

IMA's underwater survey (still to be published) showed the coral reefs to be in good shape, although aquarium fish were being notably overfished in the most accessible areas. It was recognized locally that a multi-purpose marine reserve being proposed locally in the entrance



to the lagoon surrounding Cook Island will help to sustain aquarium fish stocks in the area.

Thus, as part of a proposed aquarium fish management plan, IMA is working with local authorities (Fisheries Division, Ministry of Environment, and the Ministry of Line and Phoenix) to help set up monitoring sites within and outside of the reserve to track changes in fish populations and to empower future decisions concerning the expanded use of MPAs on Christmas for community-based management of marine resources. Overfishing of the narrow fringing reefs is the big issue facing the subsistence-based community, and although the surrounding ocean is rich, government resettlement programs are shipping increasing numbers of Gilbertese from overpopulated Tarawa (2000 miles to the west) so the pressures on the reef resources will grow. The local authorities are gradually recognizing this and realize through their isolation and dependency on the reefs how important it is to introduce effective management measures for the reefs; welcoming IMA's participation in that process. IMA's CREST or coastal curriculum development program has also been very attractive to the islanders, who will be shortly working with us to adapt the curriculum for their use in schools.

A serious issue has been the number of aquarium fish divers who have got the bends, generally dying soon after. Fifteen divers have been lost in ten years out of the 40 local divers that service the petfish industry. The US Coast Guard is often called in to help, and subsequently charges the Kiribati Government for the million dollar costs associated with the evacuation and hospital expenses. Kiribati has therefore threatened to close down the industry unless the divers get insurance.

IMA's response has been to propose a package of interventions where fish quotas are set thereby lowering exports but raising prices, effectively bringing a higher value per fish to the diver. This will reduce pressure on the

stocks and also on the divers to go deep and for extended periods to catch their fish in order to secure an income. Shallow water stocks have also become depleted forcing the divers deeper, raising the incident of decompression sickness. So, a reef management plan that utilizes MPAs to rebuild reef fish stocks will also be beneficial. IMA is also working on raising the awareness of the divers, and trying to get them regular dive training, and perhaps the opportunity for securing insurance through DAN and PADI assistance schemes.

As in all the Pacific Islands, the response from local people involved in these issues has been overwhelming, providing substantial appreciation to the donors who have had the foresight to make funds available to help the conservation of coral reefs and the sustainability of people's livelihoods, even in the most remote islands of the Pacific. There is considerable evidence that this well-targeted partnership between EAPEI, IMA and local groups can make a big difference to the environmental well being of the Pacific Islands and achieve the worthwhile goal of conserving coral reefs whilst helping to sustain community livelihoods.



**Table 1**

**IMA Pacific Program Summary:** "Helping Pacific Islands build local capacity for reducing threats concerned with destructive fishing, habitat destruction and overfishing of coral reefs to help sustain biodiversity and livelihoods"

November 15, 2001

Current actv. & proposed	Local IMA Office	Partnerships	Coral Reef Awareness	Live R Food Fish Trade	Aquarium Trade	Alternative Livelihoods	MPAs	Destr.fishing Awareness
<b>Regional Program</b>	Honolulu July 2001	IMA Hong Kong, IBRP, SPC, MAC, SPREP,	Promoting IMA Strategic Plan	RETA. Tracking. Awareness.	MAC, CCIF	Needs urgent attn & funds	Primary tool	Publishing PNG book for region
<b>PNG</b>	Port Moresby May 2001 Kavieng, Madang	PNG Dive Assoc., NFA, OEC, UPNG, Ailen Awareness (Kavieng), AIMS, WWF (Madang)	Coral Reef Educ. & Monitoring Network: students, resorts, Govt, communities, NGOs & scientists	Monitoring NFA trials & guidelines. Bldg. Regul. Capacity	Concerned about introduction of AT trade as alternative	Dive tourism FADs	Dive sites. Kavieng. Walk-in cntr for outreach	Local use of dynamite, poison rope, overfishing
<b>Vanuatu</b>	Port Vila May 2000	Fisheries Division Environment Unit Cultural Centre	Water quality monitoring. Chiefs CMT	Assessed. Trials on hold	Assessed. Clam Ban & Quotas. Mngmt Plan	Clam culture	Recording community MPAs & tabu use	Local use of poison rope
<b>Fiji</b>	Suva April 2001	Fisheries Division Min. Env't., USP AT operators, communities	Pilot curriculum & outreach at Kadavu. Community-based Mngmt at Moturiki	FD trials in 3 places. Lau assessed. Need M.Plan	Fish, coral, Live Rock assessments needed		Moturiki Kadavu and Gau	Local use of: dynamite, cyanide, overfishing
<b>Marshall Islands</b>	Majuro 1999	MIMRA	Coastal Clean-up School Curriculum.	Destructive: Need Mgmt Plan and Cap Building	To assess. Need Mgmt Plan			Local use of: cyanide, overfishing
<b>Palau</b>	Koror w/ CCN	CCN	Helen Reef assmt & local surveillance			Ecotourism	Helen Reef	
<b>Christmas Is. (Kiribati)</b>	London	Fisheries, Petfish Ops., Min. Env't.	School Curriculum		Assessed. Mgmt Plan		Monitoring for set-up	Overfishing
<b>Tonga</b>		Min. of Fisheries		To assess	Evaluated		Ha'apai	Overfishing
<b>Solomons</b>	Honiara	Fisheries, MAC		Unmanaged & Destructive	Need Mgmt Plan			Awareness: dynamite
<b>Samoa</b>	Apia	Education Dept.	School Curriculum		Evaluated	Coral culture	Upolu Isl.	Overfishing
<b>Cook Is.</b>		Fisheries, Env't.	School Curriculum		No mngmt. Use Poisons	Clam culture	Need awareness	Use poisons, overfishing
<b>Tahiti</b>		Fisheries, Env't.	School Curriculum					

